Continuing Education
Credit Hours Awarded: 5 hours

FINAL IMPRESSIONS

General Instructions

According to the Board rule, training programs MUST consist of all of the following:

1. An initial assessment to determine the base entry level of all participants in the program. At a minimum, participants must be currently certified by the Dental Assisting National Board or must have two years of clinical dental assisting experience;
2. A didactic component;
3. A laboratory component, if necessary;
4. A clinical component, which may be obtained under the personal supervision of the participant's supervising dentist while the participant is concurrently enrolled in the training program; and
5. A post-course competency assessment at the conclusion of the training program.

Conduct an initial assessment to determine base entry level of all participants in the program.

Didactic

Required Reading

Phinney & Halstead, Dental Assisting, A Comprehensive Approach, published by Delmar (Thompson), ISBN - 4018-3480-9, p. 607-617.

Suggested references to supplement didactic component:
Miller, Michael, DDS; *Reality, The Information Source for Esthetic Dentistry, The Techniques, Volume 1,* p. 30-40.
Phinney, Donna J., Halstead, Judy H.: *Delmar's Handbook of Assisting,* p. 234-236.

Objectives

1. Identify the uses of impression materials for final impressions (i.e. alginate, polyether, rubber base, polyvinyl syloxane, reversible hydrocolloid, irreversible hydrocolloid, etc.)
2. Indicate common anomalies to examine for before taking an impression.
3. Indicate the rules to follow when selecting a proper tray size for the mandibular/maxillary arch.
4. List the purposes and disadvantages of wax-trimmed trays.
5. Select the proper standing position while taking a mandibular/maxillary impression.
6. Select probable results when the tray is seated too far anteriorly/posteriorly.
7. Indicate instructions given to the patient while taking a mandibular/maxillary impression.
8. Indicate how the setting time of impression material can be altered.
9. List three structures which can be pre-coated with alginate before an impression is taken.
10. Indicate the rules to follow when working with a patient who has the tendency to gag.
11. Select the anatomical structures that should be included in a mandibular/maxillary impression.
12. Indicate the causes of the following impression defects:
    a. drags

b. bubbles
c. folds
d. indefinite developmental grooves
e. voids

13. Indicate the proper way to remove an impression.
14. Indicate the uses for bite registrations.
15. List the materials that can be used to take a bite registration.

Didactic

I. Definitions
- **A. Impression - negative likeness of the teeth & supporting structures**
- **B. Cast - positive likeness (also called model)**

II. Purposes and Uses of Study Casts
- **A. Treatment planning & case presentations**
- **B. Custom tray fabrications**
- **C. Opposing casts for crown and bridge work**
- **D. Orthodontic study models**

III. Preparation of Patient
- **A. Explain procedure to relieve any tension**
- **B. Position patient upright**
- **C. Examine oral cavity**
  - **1. Removable appliance**
  - **2. Height of the palate**
  - **3. Any undercuts**
  - **4. Malpositioned teeth**
  - **5. Mandibular tori**
    - **a. adaptation of the tray may be necessary to prevent discomfort**
  - **6. If there is excessive debris and plaque, patient should have teeth cleaned or have patient brush teeth before taking the impressions**
- **D. Request patient to use mouthrinse**
  - **1. Removes food and debris**
  - **2. Helps prevent air bubbles**
  - **3. Cuts the viscosity of the saliva**
  - **4. Helps prevent gagging on maxillary impressions**

IV. Preparation of Impression Trays
- **A. Trays should be tried in before impressions are taken for proper size**
- **B. Width: there should be 1/8 to 1/4 of an inch space between the tray and the facial and lingual surfaces to provide strength and rigidity to the impression**
  - **1. The posterior teeth should be within the confines of the tray**
    - **a. If the buccal aspects of maxillary posterior teeth perforate into the impression material on both sides of the tray, the tray is too small**

C. Length: must cover the retro molar pad on mandibular arch and tuberosity on maxillary arch.

V. Wax Trimming (Beading, Utility or Periphery Wax)

A. Purposes

1. Protect tissue from injury and provide patient comfort

2. To extend the length

3. To add to the palate on a patient with a high palatal vault

4. Extends border to aid in obtaining impression of muscle attachments

B. Tray must be dry; adapt soft wax to tray

C. Try the waxed trimmed tray in the mouth again, before taking the impression

D. The wax must be covered with impression material

E. Wax trimming increases the possibility for trapping voids

VI. Impression Material

A. Impression material is mixed according to manufactures directions.

B. To accelerate the setting use warm water, to retard use cooler water.

C. Strength and quality of the finished impression depends on:

1. Water powder ratio

2. Spatulation

3. Holding impression in position for optimum time

4. Correct tray selection

D. Filling the tray

1. Fill the tray from one end to another being careful not to trap air bubbles

2. Adapt material to tray; press slightly

3. Do not overload

a. Gag your patient

b. May cause tissue displacement

4. May wet finger and pass lightly over impression materials surface and make slight indent where teeth will insert

VII. Procedure for Taking Mandibular Impression

A. Mandibular is obtained first to familiarize the patient & gagging is less likely

B. Precoat impression material on potential areas of air entrapment

1. Occlusal, incisal, and/or interproximal

2. Distal surface of teeth adjacent to endentulous areas

3. Cervical areas of erosion/abrasion

4. Vestibule around the frenums and muscle attachments

C. Right handed operates stands at 7:30 - 8 position, Left handed operates stand 4:30 - 5:00 position.

1. Grasp handle of tray with tray facing down

2. Rotate tray in mouth using opposite hand to retract opposite corner of the mouth

3. Center over teeth-1/4 in anterior to labial surface of most anterior

incisor

D. Instruct patient to raise their tongue while tray is lowered

E. While seating the tray downward instruct patient to extend their tongue & then relax it

F. Muscle trim by pulling (retracting) lips and cheek forward

1. Muscle trimming - manipulating the cheeks & lips to conform the impression material to shape of vestibule

G. Apply equal pressure over premolar area; thumbs can be used to support the mandible

H. The occlusal plane of lower arch should be parallel to the floor when taking mandibular impression. Hold tray in position until set.

I. Removal of impression

1. Hold tray handle with thumb & finger

2. Retract cheek and lip and release edge of impression by lifting up on posterior buccal vestibule

3. Remove impression with a snap to prevent distortion

J. Rinse & disinfect & leave in plastic bag for 10 min.

K. Evaluate impression

L. Patient may rinse before maxillary impression is taken

VIII. Procedure for Taking Maxillary Impression

A. Precoat impression material as stated in mandibular procedure

B. Stand at 11:00-12:00 for Right handed, 12:00-1:00 for Left handed

C. To avoid excess impression material in posterior area load majority of material in anterior portion of tray. A small amount of impression material may be removed from the palate area also.

D. Grasp handle with tray facing upward and with left finger, retract left cheek

E. Retract right cheek with tray & rotate in the mouth

F. Center tray handle with nose

G. Seat posterior first then anterior which forces material forward

1. Instruct patient to breath through nose

2. Patient's head may be tilted forward

H. Retract lip as inserting the anterior

I. Muscle trim by rolling the cheeks and request patient to form a tight "O" with lips to mold the impression material

J. Maintain equal pressure on each side of the tray

K. Retract lip and cheek and break posterior seal and remove with snap

L. Rinse & disinfect

IX. Evaluation of Impressions by dentist

A. Accuracy and symmetry of tray placement

1. Tray should be 1/8 to 1/4 inch from labial of anterior teeth or it will be short in posterior area

2. Impression should be centered in tray

B. Voids (sharp, elongated angles)

1. The lips or tongue were in the way

2. **Too small of a tray**
3. **Improper loading & seating**
4. **Ropey saliva**
5. **Premature setting of impression material**
6. **Not enough impression material in tray**

C. Bubbles (always round)

1. **Air trapped in saliva**
2. **Air under the lip**
3. **Incorporate air when mixed**
4. **Patient gagged causing fine bubbles 1mm or less throughout impression**

D. Drags

1. **Defect in the impression caused by movement while material is setting**
2. **Premature setting**
3. **Leaves lines in direction of insertion**

E. Folds

1. **Impression material that was painted on teeth sets before tray was inserted, and the two mixes do not blend together**

F. Indefinite developmental grooves (occlusal/incisal areas)

1. **Excessive saliva**
2. **Forgot to paint alginate on occlusal surfaces**
3. **Improper mixing**

X. Impressions Should Include Surrounding Tissue Structures

A. Maxillary impression should include

1. **Labial Frenum**
2. **Buccal Muscle attachments (Buccal Frenum)**
3. **Mucco-buccal fold (vestibule)**
    a. **Muscle trim & pull lips forward while seating tray**
4. **Tuberosity**
5. **Palatal tissue (rugae)**
6. **Hamular notch & process**
7. **Palentine Fovea**
    a. **A depression between the hard & soft palate**

B. Mandibular impression should include:

1. **Labial Frenum**
2. **Lingual Frenum**
3. **Lingual Frange**
    a. **Have patient stick tongue out to muscle trim lingual frange**
4. **Mucco-buccal fold (Vestibule)**
5. **Buccal muscle attachments**
6. **Retro-molar pad**
    a. **If less than 3 mm of retro molar pad was visible, the tray was seated too far anteriorly**

XI. The Interocclusal Record (Bite Registrations)

A. Purpose

1. **To record the alignment of the teeth**
2. **To relate the mandibular to the maxillary cast correctly**
3. **Place between the cast, during trimming & storage**
4. **Special indications when wax bite is generally needed**
    a. **Open bite, end-to-end, edentulous areas**

B. Procedure for Wax-type Registration

1. **Have patient practice opening & closing on back teeth to assure correct position can be obtained**
2. **Have patient rinse with cold water (optional)**
3. **Shape a double layer of soft baseplate wax in form of a arch or use shaped bite wax**
4. **Warm wax over bunsen burner or warm water**
5. **Place wax over occlusal surfaces**
6. **Instruct patient to close on back teeth**
7. **May press wax on facial to shape it accurately to the arch**
8. **Remove & chill in cold water**

C. Procedure for Paste-type Registration

1. **Extrude base & catalyst on a mixing pad or use the gun type dispenser**
2. **Mix to a homogeneous consistency with no streaks**
3. **The bite registration frame with a gauze insert is loaded on both sides with the impression paste**
4. **Tray is placed in mouth & patient is instructed to close on back teeth during the setting**
5. **Bite registration is removed**

Clinical/Lab

Go back to **III –XI** and perform each of these procedures in a clinical setting and a lab, if appropriate. Please note that all clinical training must be done under the personal supervision of a dentist, which means that the dentist must be physically present in the treatment room.

Post-course competency assessment must be completed at the conclusion of the training program. This means you must develop a test to ensure participants have learned the necessary material and can perform these skills to written and clinical competency. Keep a copy of your competency assessment and the participants results as part of the documentation of training.

Document successful completion of this training on the Documentation of Training Form and maintain this proof in the dental office of practice.